This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

CANCEL CLAIMS 1-27

28. *(new)* A composition comprising a source of alkaline phosphatase (AP) that is suitable for preventing or reducing lipopolysaccharide (LPS)-induced toxicity at a mucosal surface when the AP is delivered to the mucosa of a body cavity, which composition optionally further comprises a pharmaceutically acceptable:

(i) stabilizer, (ii) activator, (iii) carrier, (iv) permeator, (v) propellant, (vi) disinfectant, (vii) protectant, (viii) diluent, (ix) nutrient or (x) another excipient, that promotes AP delivery to said mucosa.

29. *(new)* The composition of claim 28 wherein the AP is a mammalian intestinal AP, a tissue non specific AP, a placental AP or a liver AP.

30. *(new)* The composition according to claim 28 wherein the AP is of human or bovine origin.

31. *(new)* The composition according to claim 28 wherein the source of AP is a purified AP, an AP-enriched food product or an AP-enriched nutraceutical suitable for oral ingestion and delivery of the AP to the mucosal lining of the gastrointestinal (GI) tract.

32. *(new)* The composition according to claim 31 wherein the food product is a plant, a vegetable or a fruit that is optionally genetically modified to comprise and enhanced level of AP.

33. *(new)* The composition according to claim 31 wherein the food product is a dairy product.

34. *(new)* The composition according to claim 33 wherein the dairy product is non-pasteurized or partially pasteurized milk or a milk fraction.

35. *(new)* The composition according claim 34 wherein the milk fraction is the milk fat globule membrane fraction.

36. *(new)* The composition according to claim 28 wherein the source of AP is enterically coated for oral administration and delivery to the GI mucosa.

37. *(new)* An inhalation or spray device loaded with a composition according to claim 18 and a propellant and/or a nebulizer.

38. *(new)* A method for preventing or reducing LPS toxicity at a mucosal surface of a mammalian body cavity in a subject, comprising administering to the subject in need thereof the composition of claim 28.

39. *(new)* The method according to claim 38, wherein the prevention or reduction of LPS toxicity is for prophylaxis or treatment of an LPS-mediated or LPS-exacerbated disease or condition.

40. *(new)* The method according to claim 39, wherein the LPS-mediated or LPS-exacerbated disease or condition is an inflammatory bowel disease, sepsis or septic shock, systemic inflammatory response syndrome, meningococcemia, trauma or hemorrhagic shock, a burn injury, cardiovascular surgery, cardiopulmonary bypass surgery, liver surgery, a liver transplant, liver disease, pancreatitis, necrotizing enterocolitis, periodontal disease, pneumonia, cystic fibrosis, asthma, coronary heart disease, congestive heart failure, renal disease, hemolytic uremic syndrome, a condition requiring kidney dialysis, an autoimmune disease, cancer, Alzheimer's disease, rheumatoid arthritis, or systemic lupus erythematosus.

41. *(new)* The method according to claim 38 wherein the composition is administered orally.

42. *(new)* The method according to claim 38 wherein the mucosal surface is in the GI tract.

43. *(new)* The method according to claim 42 wherein the composition is administered for the prophylaxis or treatment of a GI tract inflammatory disease.

44. *(new)* The method according to claim 43, wherein the GI tract inflammatory disease is selected from the group consisting of: inflammatory bowel disease, Crohn's disease, colitis, ulcerative colitis, hepatobiliary disease, hepatitis B, hepatitis C, liver cirrhosis, liver fibrosis, bile duct inflammation, biliary obstruction, pancreatitis, peritonitis, periodontal disease, and enterocolitis/necrotizing enterocolitis.

45. *(new)* The method according to claim 42 wherein the GI tract is more sensitive to LPS as a result of enhanced mucosal permeability of LPS due to (i) decreased intestinal perfusion or (ii) intestinal ischemia.

46. *(new)* The method according to claim 45 wherein the decreased perfusion or ischemia is a result of cardiopulmonary bypass surgery, trauma or wounding, burns, cardiac surgery, congenital heart disease, congestive heart failure, coronary heart disease, or ischemic heart disease.

47. *(new)* The method according to claim 38 wherein the composition is administered topically to said mucosa.

48. *(new)* The method according to claim 47 wherein the composition is administered to nasal mucosa, oral mucosa, vagina mucosa, or rectal mucosa.

49. *(new)* The method according to claim 47 wherein the composition is administered for treating a local or systemic inflammatory disease.

50. *(new)* The method according to claim 47 wherein the subject has a disease or disorder selected from the group consisting of a nasal infection, an oral infection, a vaginal infection or vaginitis, a rectal infection, a urinary tract infection, a sexually transmitted disease, and periodontal disease.

51. *(new)* The method according to claim 38 wherein the composition is administered by inhalation.

52. *(new)* The method according to claim 51 wherein the body cavity is respiratory tract mucosa.

53. *(new)* The method according to claim 52 wherein the composition is administered for the prophylaxis or treatment of an inflammatory disease of the respiratory system.

54. *(new)* The method according claim 47 wherein the subject has a disease selected from the group consisting of pneumonia, a lung infection, asthma, cystic fibrosis, bronchitis, and emphysema.